Base Year: 1999 By: S. Schultz

SOURCE INVENTORY

CATEGORY # 39

CONCRETE BATCHING

1999 EMISSIONS

Introduction

This category accounts for dust emissions from concrete batching plants. Concrete batching is composed of water, cement, sand, gravel and crushed stone. Concrete batching is prepared either at a building construction site or for the manufacture of concrete products such as pipes and prefabricated construction parts. Fugitive sources of emissions include the loading and unloading of cement, handling of sand and the mixing of cement, sand, and aggregate.

Methodology

This category contains emissions from point and area sources. For point sources, the data bank contains throughput information submitted by individual concrete batching plants by sources. Emissions are then calculated by using specific emission factors for a particular source operation supplied by the company.

Cement production for California in 1999 was estimated at 11,893,800 short tons. This was calculated by taking the U.S. production, as provided by the Department of Conservation, Bureau of Mines, and multiplying that figure by the California fraction of the U.S. total. Total 1999 concrete production in California (using mixing ratios found in AP-42, page 8.10-4) was estimated at 95,150,400 tons/yr. and allocated throughout California by means of population. The Bay Area's concrete production from both point and area sources was estimated at 18,716,084 tons/yr. The 1999 area source throughput of 10,242,196 tons/year was calculated by subtracting the total concrete production throughput from the point source throughput.

The emission factors used for area source concrete batching, based on Truck Mix Operations found in AP-42, page 8.10-4, include total process emissions, wind erosion from sand and aggregate storage piles, and vehicular travel from unpaved roads. The composite emission factor was estimated at .16 lbs/ton of concrete produced (160 lbs/1000 tons). Emissions from area sources were calculated by multiplying this emission factor to the estimated area source concrete production throughput.

Monthly Variation

Monthly variation was estimated and used to distribute emissions over the 12 months.

County Distribution

Emissions were distributed to counties by the population in each county.

TRENDS

Growth

Projections from 1967 to 2030 were based on District data and a modified growth profile created by ABAG for construction activities.